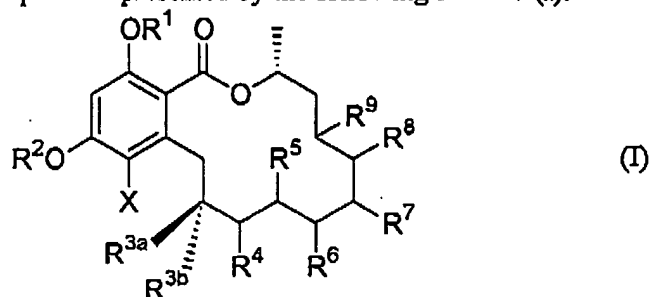


CLAIMS

1. A dermal papilla cell growth promoter containing a compound having an activity of inhibiting the function of WNT-5A.

2. The dermal papilla cell growth promoter according to claim 1 wherein the compound inhibiting the function of WNT-5A is a WNT-5A production inhibitor.

3. A compound represented by the following formula (I):



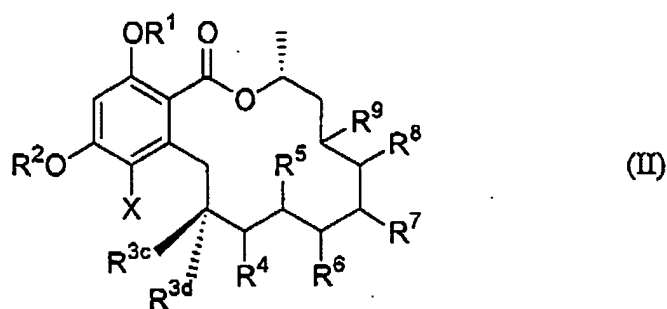
wherein R^1 and R^2 are the same or different and each represents a hydrogen atom, a C_{1-6} alkyl group or a C_{2-6} alkanoyl group;

X represents a hydrogen atom or a halogen atom;

R^{3a} and R^{3b} are the same or different and each represents a hydrogen atom or a hydroxyl group; and

R^4 , R^5 , R^6 , R^7 , R^8 and R^9 are the same or different and each represents a hydrogen atom, a hydroxyl group, a halogen atom or a C_{2-6} alkanoyloxy group, or adjacent groups thereof are taken together to form a π bond or an ether bond, or R^5 and R^8 or R^5 and R^9 are taken together to form an ether bond.

4. A dermal papilla cell growth promoter containing a compound represented by the following formula (II):

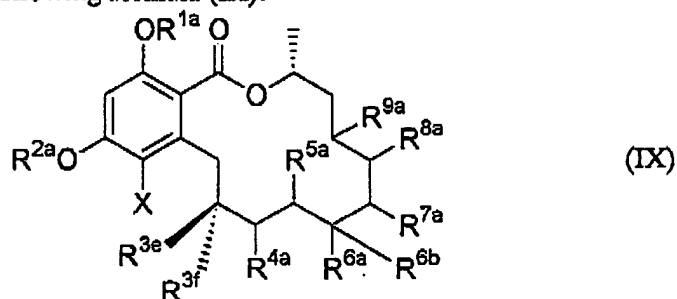


wherein R^1 and R^2 are the same or different and each represents a hydrogen atom, a C_{1-6} alkyl group or a C_{2-6} alkanoyl group; X represents a hydrogen atom or a halogen atom;

R^{3c} and R^{3d} are the same or different and each represents a hydrogen atom, a hydroxyl group or a C_{1-6} alkoxy group, or R^{3c} and R^{3d} are taken together to form an oxo group, a hydroxyimino group or a C_{1-6} alkoxyimino group; and

R^4 , R^5 , R^6 , R^7 , R^8 and R^9 are the same or different and each represents a hydrogen atom, a hydroxyl group, a halogen atom or a C_{2-6} alkanoyloxy group, or adjacent groups thereof are taken together to form a π bond or an ether bond, or R^5 and R^8 or R^5 and R^9 are taken together to form an ether bond.

5. A dermal papilla cell growth promoter containing a compound represented by the following formula (IX):



wherein R^{1a} and R^{2a} are the same or different and each represents a hydrogen atom, a C_{1-6} alkyl group, a C_{2-6} alkanoyl group,

a group represented by $(\text{CH}_2)_p\text{CO-Y-R}^{10}$, wherein Y represents an oxygen atom or a sulfur atom; R^{10} represents a hydrogen atom, a C_{1-6} alkyl group or a substituted or unsubstituted aryl group; and p is 0 or 1,

a group represented by $(\text{CH}_2)_q\text{R}^{11}$, wherein R^{11} represents a substituted or unsubstituted cycloalkyl group or a substituted or unsubstituted C_{2-10} heterocycle; and q is 0 or 1, or

a group represented by COR^{12} , wherein R^{12} represents a substituted or unsubstituted aryl group or a substituted or unsubstituted C_{2-10} heterocycle;

X represents a hydrogen atom or a halogen atom;

R^{3c} and R^{3f} are the same or different and each represents a hydrogen atom, a hydroxyl group, a C_{1-6} alkoxy group or a C_{1-6} alkanoyloxy group, or R^{3c} and R^{3f} are taken together to form an oxo group, a hydroxyimino group or a C_{1-6} alkoxyimino group; and

R^{4a} , R^{5a} , R^{6a} , R^{7a} , R^{8a} and R^{9a} are the same or different and each represents a hydrogen atom, a hydroxyl group, a halogen atom or

a group represented by Z-R^{13} , wherein Z represents an oxygen atom or a sulfur atom; and R^{13} represents a C_{1-6} alkyl group, a C_{1-6} alkanoyl group or a substituted or unsubstituted aryl group, or

adjacent groups thereof are taken together to form a π bond or an ether bond, or

R^{5a} and R^{8a} or R^{5a} and R^{9a} are taken together to form an ether bond; and

R^{6b} represents a hydrogen atom, or is taken together with R^{3c} and R^{3f} to form an ether bond.

6. A hair growth stimulant or a hair growth tonic which comprises the dermal papilla cell growth promoter according to any one of claims 1, 2, 4 and 5 as an active ingredient.

7. A method of stimulating hair growth or promoting hair growth, which comprises administering a pharmaceutically effective amount of a compound having an activity of inhibiting the function of WNT-5A to human.

8. Use of a compound having an activity of inhibiting the function of WNT-5A in producing a hair growth stimulant or a hair growth tonic.

9. A method of screening a dermal papilla cell growth promoter, which comprises selecting a compound inhibiting the function of WNT-5A.

10. The method according to claim 9, which comprises the following steps (a) to (c):

(a) a step of culturing human WNT-5A-expressing cells in a medium to which a compound has been added;

(b) a step of lysing the human WNT-5A-expressing cells cultured in the step (a) to extract RNA, and determining the WNT-5A mRNA amount; and

(c) a step of comparing the WNT-5A mRNA amount determined in the step (b).